

OIPE

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/017,410

DATE: 01/10/2002

TIME: 15:52:34

Input Set : A:\Uw974011.app

Output Set: N:\CRF3\01102002\J017410.raw

ENTERED

3 <110> APPLICANT: Farnham, Peggy J
 4 Graveel, Carrie R
 6 <120> TITLE OF INVENTION: Polynucleotide Differentially Expressed in Liver Cancer
 8 <130> FILE REFERENCE: 960296.97401
 C--> 10 <140> CURRENT APPLICATION NUMBER: US/10/017,410
 C--> 11 <141> CURRENT FILING DATE: 2001-12-14
 13 <160> NUMBER OF SEQ ID NOS: 4
 15 <170> SOFTWARE: PatentIn Ver. 2.1
 17 <210> SEQ ID NO: 1
 18 <211> LENGTH: 4175
 19 <212> TYPE: DNA
 20 <213> ORGANISM: Mus musculus
 22 <220> FEATURE:
 23 <221> NAME/KEY: CDS
 24 <222> LOCATION: (35)..(859)
 26 <400> SEQUENCE: 1
 27 ggcacgaggg ctgctccgat gctccagagc ggcc atg ggc gcc ccg cac tgg tgg 55
 28 Met Gly Ala Pro His Trp Trp
 29 1 5
 31 gac cac ctg cgg gct ggc agt tcg gag gtg gat tgg tgc gag gac aac 103
 32 Asp His Leu Arg Ala Gly Ser Ser Glu Val Asp Trp Cys Glu Asp Asn
 33 10 15 20
 35 tac act atc gtg cct gcc att gcc gag ttc tac aac acg atc agc aac 151
 36 Tyr Thr Ile Val Pro Ala Ile Ala Glu Phe Tyr Asn Thr Ile Ser Asn
 37 25 30 35
 39 gtc ttg ttt ttc att tta cct ccc atc tgc atg tgc ttg ttc cgc cag 199
 40 Val Leu Phe Phe Ile Leu Pro Pro Ile Cys Met Cys Leu Phe Arg Gln
 41 40 45 50 55
 43 tac gca acg tgc ttc aac agc ggc atc tac tta ata tgg acg ctc cta 247
 44 Tyr Ala Thr Cys Phe Asn Ser Gly Ile Tyr Leu Ile Trp Thr Leu Leu
 45 60 65 70
 47 gtt gta gtg ggg att gga tct gtc tac ttc cat gca acg ctg agt ttc 295
 48 Val Val Val Gly Ile Gly Ser Val Tyr Phe His Ala Thr Leu Ser Phe
 49 75 80 85
 51 ctg ggt cag atg ctt gat gaa ctt gcc att ctg tgg gtt ctg atg tgt 343
 52 Leu Gly Gln Met Leu Asp Glu Leu Ala Ile Leu Trp Val Leu Met Cys
 53 90 95 100
 55 gct ttg gcc atg tgg ttt ccc agg agg tat tta cca aag atc ttt cgg 391
 56 Ala Leu Ala Met Trp Phe Pro Arg Arg Tyr Leu Pro Lys Ile Phe Arg
 57 105 110 115
 59 aat gac agg ggc agg ttc aag gca gtg gtg tgt gtc ctg tct gca att 439
 60 Asn Asp Arg Gly Arg Phe Lys Ala Val Val Cys Val Leu Ser Ala Ile
 61 120 125 130 135
 63 aca acg tgc ttg gcg ttt atc aag ccc gcc atc aac aat att tcc ctg 487
 64 Thr Thr Cys Leu Ala Phe Ile Lys Pro Ala Ile Asn Asn Ile Ser Leu
 65 140 145 150
 67 atg att ctg gga ctt cca tgc act gcg ctg ctt gtt gca gag ctg aag 535

RAW SEQUENCE LISTING

DATE: 01/10/2002

PATENT APPLICATION: US/10/017,410

TIME: 15:52:34

Input Set : A:\Uw974011.app

Output Set: N:\CRF3\01102002\J017410.raw

```

68 Met Ile Leu Gly Leu Pro Cys Thr Ala Leu Leu Val Ala Glu Leu Lys
69      155      160      165
71 agg tgt gac aat gtg cgt gtg ttt aag ctg ggc ctc ttc tct ggc ctc 583
72 Arg Cys Asp Asn Val Arg Val Phe Lys Leu Gly Leu Phe Ser Gly Leu
73      170      175      180
75 tgg tgg act ctg gct ctc ttc tgc tgg atc agc gac caa gcc ttc tgt 631
76 Trp Trp Thr Leu Ala Leu Phe Cys Trp Ile Ser Asp Gln Ala Phe Cys
77      185      190      195
79 gag ctg ctc tcc tcc ttt cac ttc ccc tac ctg cac tgt gtg tgg cat 679
80 Glu Leu Leu Ser Ser Phe His Phe Pro Tyr Leu His Cys Val Trp His
81 200      205      210      215
83 att ctc atc tgc ctt gct tgc tac ctg ggc tgt gtg tgc ttc gcc tac 727
84 Ile Leu Ile Cys Leu Ala Ser Tyr Leu Gly Cys Val Cys Phe Ala Tyr
85      220      225      230
87 ttt gat gct gcc tca gag ata cct gag caa ggt cca gtc atc aga ttc 775
88 Phe Asp Ala Ala Ser Glu Ile Pro Glu Gln Gly Pro Val Ile Arg Phe
89      235      240      245
91 tgg ccc agc gag aaa tgg gct ttt att ggt gtc cct tat gtg tcc ctt 823
92 Trp Pro Ser Glu Lys Trp Ala Phe Ile Gly Val Pro Tyr Val Ser Leu
93      250      255      260
95 ctg tgt gcc cac aag aag tgc cca gtc aag atc acg tgatggcaag 869
96 Leu Cys Ala His Lys Lys Ser Pro Val Lys Ile Thr
97      265      270      275
99 gcagtgacca gcttctctac ttacttctat tcgagtgcgc gctgggcttc gtttgctagc 929
101 aaagatggct gaggggggtt aggaattggt gtggtgtggg tgtttaaaat tctgctcctt 989
103 tgtgatctaa ctggaccact gtgcctgacc tccctaggtt aagtagaggg ctcagggaca 1049
105 taagggtgtct tctcagtat cctttccagg catacgggct tgcgtgggta tgtccataat 1109
107 gacatcaaca gagtagttct ttgggagacc tagggcaacc caaagtttct tgctggagag 1169
109 ggtagcttgc tgtttccacc atttccagac tctcaacccc ctgataaaca agaccttctg 1229
111 atttggtgat gaaaggttcc agaacttttc attttgccgg gagaaactgt ccttcaacaa 1289
113 aaccaagtgg gcaaaacacg tgtggggggt gtgactaaga cgggtggcct gtcactcgca 1349
115 cctcttagct ttcccaggtt ctccacgtgt ttgtggatcc ttccactacc tctgctgaga 1409
117 gatggagcca cggcttcaga gggcaaacgt ggcaaacccc tctatgccaa aagctacaact 1469
119 cctctttaag cacacattac atagacacta tttctgctct tccagagtgc agcagcctca 1529
121 gacccacaga gaatccttca ggttatgtga agattccaca cacagccccc tcttgtgacc 1589
123 tctgtgagag caaggcctcg ttgtaatcgc ggaggcagct ctggaggcct gactgtggag 1649
125 cgctgtgaa gattttggaa agcttttctt attggaagct tttggtgtgt cgttacctcc 1709
127 aagattctga ccccgtttct ctgctgtttt taggggatat gtgcttctct agtgacgtag 1769
129 cctccctagg atgtgggcct ccggttttgc ttttcataat acctggtgct aactggtttc 1829
131 tcagagcact ttgctcttct tgatgctggg cggtcactac actctgattg gctggctggg 1889
133 gatcccaggg aggaaggggc agactctgac atgaatgtct ctacactgca tctactgtc 1949
135 ttcactgggc tctcttcagg gtatgaagtg ggtatggggt atctcaggga tgtttgtaac 2009
137 tcaggcacct tctgctttct gacattccat tgcagtgggt gagactgcac tcaggggact 2069
139 ggagttggaa caccgttctg agtgggtgcc tgagtctgaa ggagctagct gcgggttctg 2129
141 gcacttctag gatctcttca tctgttttag accttcacag ggtacaaagt ggggaactgga 2189
143 cttaaagagt ttttaaataa atagacttca tctgctttt gtggcttttg agttttaaaa 2249
145 gtaacttgct gggctatttc ttgtttatat tcacaaatat ttatagaaca tgaaggtgta 2309
147 aaataagttg tcttttatta aattcatagc atttaccaac tctcccaggt agcaaacaca 2369
149 cagtcatttg attggcgatt tacaaggcag gaatacttgg ttttgaatga ttgtatatgt 2429

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/017,410

DATE: 01/10/2002

TIME: 15:52:34

Input Set : A:\Uw974011.app

Output Set: N:\CRF3\01102002\J017410.raw

```

151 cattttactg tagcttaaaa tatgttttaa atgactttga gtgaaatggt tgtggcaacc 2489
153 taggggttta tggatcagaa ttgcggctga gtcctttggt ttttgagtct agaagttttc 2549
155 agagggcaaaa atcaaaactag ccttgtttct ggttcatctt accaggctcg ggagctgccc 2609
157 ttatatattc tacataagga cttattatac ataagtctgt ataaatgtcc tgaagatgac 2669
159 acctagctgc cttcatctgg aagggtcgtc tggggctgga gagttggttc aacagttaag 2729
161 aacccgtggt gctctctccc agacgaccca gcgacttggt aggtccataa ccagcaactc 2789
163 cagccctggg gcatctgacg ccctcttctg acttctaagg gcatttggtg cacacgtaca 2849
165 tacaggcagg caaaacattt atacatgtaa cgtataaat gcataagtta gtgagacggc 2909
167 tgaaggaaag gagttttaga tgcaagggtt agtctgacct gagtgccctt ccttagccgc 2969
169 gatggtgtcc tcaaagtcag ggaagaacca tttctttttt atcaggaaaa ggacttattc 3029
171 cctagggcct ctgctgacat ccctaggaac agagataaaa tacggatgga tgtgaatgaa 3089
173 catgcttggg tgaaaggagc cgagtacctg actggaccca gtgggccact tccacaagcg 3149
175 aagcccggta accgatgtgc actccagaat cttctccctt ctggtagaga tgacatcgat 3209
177 gagtgaatgc gtgaccactg ggccctgcat ggggtgcggg ctctgttctg ttccgaatct 3269
179 acctgagatc tcaggacaga ggaagccatg aatgttacca agtggtcgat gctgtcagtg 3329
181 attttacagt tttgaaccat tattggtttt taggagaatt cttctctctc tagtgccctg 3389
183 tgatgccaaa gccagccctt cagaagtgtt ccttctgtct gcttcccttt gtaatgtgat 3449
185 ccaactgggg aaatgggtgt ctaccagggg aaaagtgcct accccagtca cgggtcaaca 3509
187 gtgttggtgt gaggatcaaa catggctctg tgaaaatact gccacccatt ctattggttg 3569
189 gatttctcag gagtctgaat cttccctcac gagtccctt ctcccaacct ctaccagag 3629
191 ccaacactgg gatttgaacc ttctctgact ctcttcttcc ctccaggtctg acaactaatg 3689
193 gtctctgggg acaccagct agggccttcc ccaactcctt atccagctga acttggattc 3749
195 ttcccaacca gggcttgacc tgggtgctgt tgggtccact ggccaacaac acatcttttg 3809
197 ccagattggg attctcaata gattttatag acattattct cccacagact ttaaacatg 3869
199 gcttgtgtct ttccatacac atccggtcag attttaaact attttataac cacaggaatt 3929
201 aaaccaagca aatagagtac tttcagatat aaactgtgtt tcatacttta tgtagagtgt 3989
203 gctatgtata ggcggtatgt accctggctg aagtaatat aaccatagct ctgggaggat 4049
205 ttacagacct tttgcacttt atgctttttt gtgaactctg ataaccatgg tcaatattaa 4109
207 agccaataac tggcattttc tgtgaataaa catgcataat tatctaaaaa aaaaaaaaaa 4169
209 aaaaac

```

4175

212 <210> SEQ ID NO: 2

213 <211> LENGTH: 275

214 <212> TYPE: PRT

215 <213> ORGANISM: Mus musculus

217 <400> SEQUENCE: 2

```

218 Met Gly Ala Pro His Trp Trp Asp His Leu Arg Ala Gly Ser Ser Glu
219   1                      5                      10                      15
221 Val Asp Trp Cys Glu Asp Asn Tyr Thr Ile Val Pro Ala Ile Ala Glu
222   20                      25                      30
224 Phe Tyr Asn Thr Ile Ser Asn Val Leu Phe Phe Ile Leu Pro Pro Ile
225   35                      40                      45
227 Cys Met Cys Leu Phe Arg Gln Tyr Ala Thr Cys Phe Asn Ser Gly Ile
228   50                      55                      60
230 Tyr Leu Ile Trp Thr Leu Leu Val Val Val Gly Ile Gly Ser Val Tyr
231   65                      70                      75                      80
233 Phe His Ala Thr Leu Ser Phe Leu Gly Gln Met Leu Asp Glu Leu Ala
234   85                      90                      95
236 Ile Leu Trp Val Leu Met Cys Ala Leu Ala Met Trp Phe Pro Arg Arg
237  100                      105                      110

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/017,410

DATE: 01/10/2002

TIME: 15:52:34

Input Set : A:\Uw974011.app

Output Set: N:\CRF3\01102002\J017410.raw

```

239 Tyr Leu Pro Lys Ile Phe Arg Asn Asp Arg Gly Arg Phe Lys Ala Val
240      115      120      125
242 Val Cys Val Leu Ser Ala Ile Thr Thr Cys Leu Ala Phe Ile Lys Pro
243      130      135      140
245 Ala Ile Asn Asn Ile Ser Leu Met Ile Leu Gly Leu Pro Cys Thr Ala
246 145      150      155      160
248 Leu Leu Val Ala Glu Leu Lys Arg Cys Asp Asn Val Arg Val Phe Lys
249      165      170      175
251 Leu Gly Leu Phe Ser Gly Leu Trp Trp Thr Leu Ala Leu Phe Cys Trp
252      180      185      190
254 Ile Ser Asp Gln Ala Phe Cys Glu Leu Leu Ser Ser Phe His Phe Pro
255      195      200      205
257 Tyr Leu His Cys Val Trp His Ile Leu Ile Cys Leu Ala Ser Tyr Leu
258      210      215      220
260 Gly Cys Val Cys Phe Ala Tyr Phe Asp Ala Ala Ser Glu Ile Pro Glu
261 225      230      235      240
263 Gln Gly Pro Val Ile Arg Phe Trp Pro Ser Glu Lys Trp Ala Phe Ile
264      245      250      255
266 Gly Val Pro Tyr Val Ser Leu Leu Cys Ala His Lys Lys Ser Pro Val
267      260      265      270
269 Lys Ile Thr
270      275
274 <210> SEQ ID NO: 3
275 <211> LENGTH: 828
276 <212> TYPE: DNA
277 <213> ORGANISM: Homo sapiens
279 <220> FEATURE:
280 <221> NAME/KEY: CDS
281 <222> LOCATION: (1)..(825)
283 <400> SEQUENCE: 3
284 atg ggc gcc ccg cac tgg tgg gac cag ctg cag gct ggt agc tcg gag 48
285 Met Gly Ala Pro His Trp Trp Asp Gln Leu Gln Ala Gly Ser Ser Glu
286 1 5 10 15
288 gtg gac tgg tgc gag gac aac tac acc atc gtg cct gct atc gcc gag 96
289 Val Asp Trp Cys Glu Asp Asn Tyr Thr Ile Val Pro Ala Ile Ala Glu
290 20 25 30
292 ttc tac aac acg atc agc aat gtc tta ttt ttc att tta ccg ccc atc 144
293 Phe Tyr Asn Thr Ile Ser Asn Val Leu Phe Phe Ile Leu Pro Pro Ile
294 35 40 45
296 tgc atg tgc ttg ttt gat gag tat gca aca tgc ttg aac agt gac atc 192
297 Cys Met Cys Leu Phe Asp Glu Tyr Ala Thr Cys Leu Asn Ser Asp Ile
298 50 55 60
300 tac tta atc tgg act ctt ttg gtt gta gtg gga att gga tcc gtc tac 240
301 Tyr Leu Ile Trp Thr Leu Leu Val Val Val Gly Ile Gly Ser Val Tyr
302 65 70 75 80
304 ttc cat ttt acc ctt agt ttc ttg ggt cag atg ctt gat gaa ctt gca 288
305 Phe His Phe Thr Leu Ser Phe Leu Gly Gln Met Leu Asp Glu Leu Ala
306 85 90 95
308 gtc ctt tgg gtt ctg atg tgt gct ttg gcc atg tgg ttc ccc aga agg 336

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/017,410

DATE: 01/10/2002

TIME: 15:52:34

Input Set : A:\Uw974011.app

Output Set: N:\CRF3\01102002\J017410.raw

```

309 Val Leu Trp Val Leu Met Cys Ala Leu Ala Met Trp Phe Pro Arg Arg
310      100      105      110
312 tat cta cca aag atc ttt cgg aat gac agg ggt agg ttc aag gtg gtg 384
313 Tyr Leu Pro Lys Ile Phe Arg Asn Asp Arg Gly Arg Phe Lys Val Val
314      115      120      125
316 gtc agt gtc ctg tct gcg gtt acg acg tgc ctg gca ttt gtc aag cct 432
317 Val Ser Val Leu Ser Ala Val Thr Thr Cys Leu Ala Phe Val Lys Pro
318      130      135      140
320 gcc atc aac aac atc tct ctg atg acc ctg gga gtt cct tgc act gca 480
321 Ala Ile Asn Asn Ile Ser Leu Met Thr Leu Gly Val Pro Cys Thr Ala
322 145      150      155      160
324 ctg ctc atc gca gag cta aag agg tgt gac aac atg cgt gtg ttt aag 528
325 Leu Leu Ile Ala Glu Leu Lys Arg Cys Asp Asn Met Arg Val Phe Lys
326      165      170      175
328 ctg ggc ctc ttc tcg ggc ctc tgg tgg acc ctg gcc ctg ttc tgc tgg 576
329 Leu Gly Leu Phe Ser Gly Leu Trp Trp Thr Leu Ala Leu Phe Cys Trp
330      180      185      190
332 atc agt gac cga gct ttc tgc gag ctg ctg tca tcc ttc aac ttc ccc 624
333 Ile Ser Asp Arg Ala Phe Cys Glu Leu Leu Ser Ser Phe Asn Phe Pro
334      195      200      205
336 tac ctg cac tgc atg tgg cac atc ctc atc tgc ctt gct gcc tac ctg 672
337 Tyr Leu His Cys Met Trp His Ile Leu Ile Cys Leu Ala Ala Tyr Leu
338      210      215      220
340 ggc tgt gta tgc ttt gcc tac ttt gat gct gcc tca gag att cct gag 720
341 Gly Cys Val Cys Phe Ala Tyr Phe Asp Ala Ala Ser Glu Ile Pro Glu
342 225      230      235      240
344 caa ggc cct gtc atc aag ttc tgg ccc aat gag aaa tgg gcc ttc att 768
345 Gln Gly Pro Val Ile Lys Phe Trp Pro Asn Glu Lys Trp Ala Phe Ile
346      245      250      255
348 ggt gtc ccc tat gtg tcc ctc ctg tgt gcc aac aag aaa tca tca gtc 816
349 Gly Val Pro Tyr Val Ser Leu Leu Cys Ala Asn Lys Lys Ser Ser Val
350      260      265      270
352 aag atc acg tga 828
353 Lys Ile Thr
354      275
357 <210> SEQ ID NO: 4
358 <211> LENGTH: 275
359 <212> TYPE: PRT
360 <213> ORGANISM: Homo sapiens
362 <400> SEQUENCE: 4
363 Met Gly Ala Pro His Trp Trp Asp Gln Leu Gln Ala Gly Ser Ser Glu
364 1      5      10      15
366 Val Asp Trp Cys Glu Asp Asn Tyr Thr Ile Val Pro Ala Ile Ala Glu
367      20      25      30
369 Phe Tyr Asn Thr Ile Ser Asn Val Leu Phe Phe Ile Leu Pro Pro Ile
370      35      40      45
372 Cys Met Cys Leu Phe Asp Glu Tyr Ala Thr Cys Leu Asn Ser Asp Ile
373      50      55      60
375 Tyr Leu Ile Trp Thr Leu Leu Val Val Val Gly Ile Gly Ser Val Tyr

```

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/017,410

DATE: 01/10/2002

TIME: 15:52:35

Input Set : A:\Uw974011.app

Output Set: N:\CRF3\01102002\J017410.raw

L:10 M:270 C: Current Application Number differs, Replaced Application Number

L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date